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Conference Abstract

Building New Opportunities: Planning Towards Integrated, Open and Accessible Natural History Collections

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Abstract

The accessibility, value and role of natural history collections (NHCs) for nature conservation, education and society in general, increases over time. The concept of NHCs evolves through advancements in information systems, research methods, and collection studies (Miller et al. 2020). Therefore, we need a new infrastructure for NHCs, which provides the necessary physical and organizational structures to support this evolving approach, including digitization labs, digital solutions for improved workflows, and architectural designs like publicly viewable collection workplaces. With this concept, the contemporary museum constitutes a shared space that recognises the importance of nature, supported by a science-based approach.

The Estonian Museum of Natural History (EMNH) is currently making one of the largest developmental leaps in its 160-year history. In total, approximately 360,000 specimens, dating back 200 years, are preserved in the museum's storage facilities. The museum's collection contains specimens from around the world and is focused on Estonia's natural heritage. The collection includes extensive mycological, zoological, botanical, geological, and science-related historical artifacts (e.g., collecting equipment, models of specimens), along with photo and multimedia collections. Currently, 95% of the museum's collections

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are digitized. The specimen data is published in the Global Biodiversity Information Facility (GBIF), with the original data housed on the PlutoF and Geocollections platforms.

Although the museum plays a significant role in advancing the natural sciences, people outside the museum's circle might find it difficult to perceive how vast and unique the collections are, and what kind of work is done behind the scenes. The role of collections in science, education or society in general is also only vaguely acknowledged.

By constructing a new building for the EMNH, scheduled to open in 2027, new opportunities arise. As a new community centre, the museum provides the opportunity for visitors, emerging professionals, citizen scientists, students, etc. to enhance and share their knowledge of the importance of biodiversity.

Some examples of the numerical growth the new building will bring, compared to old museum facilities, are as follows: the museum could attract 200 000 more visitors than we are able to welcome in the current building. The new building will have ten times more exhibition space and the collection area will enlarge more than 50% from its current size.

Many infrastructural and conceptual ideas applied in the new building will contribute to integrating our NHCs into society. Extra workspace will provide sufficient room for curators and students, researchers, and interns. New curator workrooms contain flexible spaces for different projects. The exhibition hall features display windows allowing visitors to peek into the curator’s workrooms, collection spaces, and the wet preparations lab. By embracing the principle of an open collection, the museum offers a unique opportunity to observe how specimens are stored and what procedures are involved in their preservation. This way the usually hidden part of the museum is integrated to the exhibition.

A special room is planned for a mixed collection, comprised of a variety of differently prepared specimens and a display of various storage methods. The room will be primarily used to welcome groups and provide educational visits. For hands-on education, the new building will house a learning laboratory, classrooms and a space with direct access from the street for workshops, meetings, and experimental exhibitions, making it easier to engage passers-by. The exhibition area will have a multifunctional activity space within the exhibition, where museum staff can showcase various sections of their work.

The digitization lab provides the opportunity to create high-quality photos and digital twins of specimens (Reinhardt et al. 2024), making them more accessible among scientists and the wider public. Improved digital imaging quality enhances research possibilities for photo analysis and AI applications. The new workshop also provides an excellent opportunity for conservation and taxidermy of specimens.

We engaged target groups from school children to specialists during the planning process to make a museum that fulfills their needs. The new museum is planned as a platform that engages the society, initiates discussions, and brings together various target and interest groups to discuss environmental topics. By planning and building new

infrastructure for the EMNH, we develop both digital and physical functionality and make our NHCs more accessible to all interest groups.

The concept of open collections brings the behind-the-scenes activities to everyday visitors, engages people, and informs them about the opportunities and the role of NHCs. The new core exhibition and the science-based environmental-educational activities tightly linked to our NHCs will create a new incubator for positive changes. By developing and introducing new methods of making our NHCs accessible to a wider audience, the collections can better assist the society in making decisions and raising awareness.

Keywords

open collections, environmental education, community engagement, social impact, Estonian Museum of Natural History

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Conflicts of interest

The authors have declared that no competing interests exist.

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